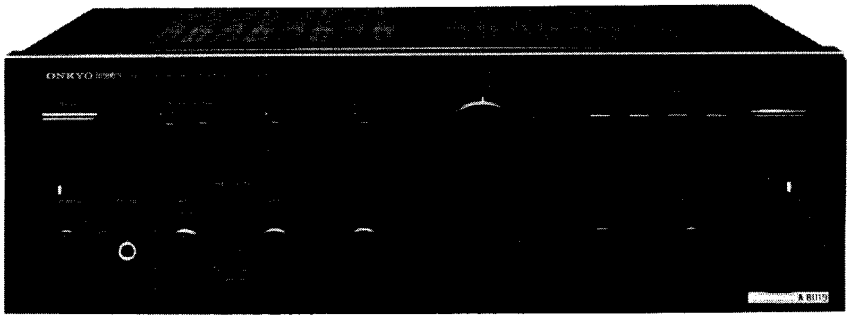
SERIAL No. 3186

ONKYO SERVICE MANUAL

SUPER SERVO INTEGRATED STEREO AMPLIFIER MODEL A-8019



Silver and Black models

UDN, UD	120V AC, 60Hz
UG	220V AC, 50Hz
UW	120V or 220V AC, 50/60Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

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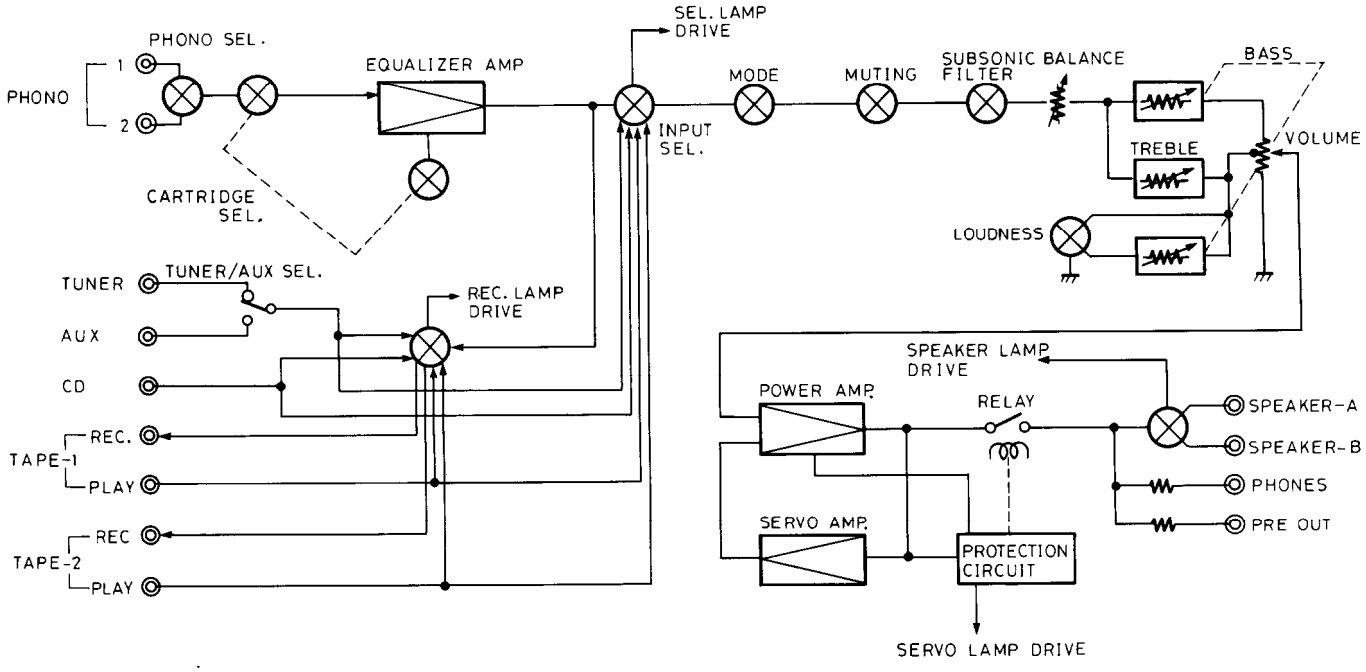
ONKYO®
AUDIO COMPONENTS

SPECIFICATIONS

Music Power Output:	2 x 240 watts at 4 ohms, 1kHz (DIN) 2 x 150 watts at 8 ohms, 1kHz (DIN)
Continuous Power Output:	2 x 170 watts at 4 ohms, 1kHz (DIN) 2 x 120 watts at 8 ohms, 1kHz (DIN)
Power Output:	100 watts per channel, min. RMS, at 8 ohms, both channels driven, from 20Hz to 20kHz, with no more than 0.012% THD
Total Harmonic Distortion:	0.012% at rated power
IM Distortion:	0.005% at rated power
Damping Factor:	50 at 8 ohms
Frequency Response:	2–50,000Hz ± 1dB
RIAA Deviation (MM):	20–20,000Hz ± 0.3dB
Sensitivity and Impedance:	Phono (MM): 2.5mV/50 kohms Phono (78EQ): 2.5mV/50 kohms Phono (MC): 160μV/100,220 ohms Tuner: 150mV/50 kohms Tape Play: 150mV/50 kohms Tape Rec: 150mV/3.3 kohms (phono) Pre Out: 1.5V/600 ohms
Phono Overload:	210mV RMS at 1kHz, 0.012% THD
Bass Control:	± 8dB at 70Hz
Treble Control:	± 8dB at 20,000Hz
Signal to Noise Ratio:	Phono (MM): 80dB (IHF A-202, 5mV input, 1 watt output) Phono (MC): 73dB (IHF A-202, 0.5mV input, 1 watt output) CD, Tuner & Tape: 84dB (IHF A-202, 0.5V input, 1 watt output)
Muting:	–20dB
Loudness Control:	+6dB at 70Hz, +5dB at 20kHz
Subsonic Filter:	15Hz, 20Hz (6dB/Oct.)
High Cut (TREBLE MIN):	6kHz (6dB/Oct.)
Semiconductors:	IC: 5 TR: 49 Diode: 32
Dimensions:	435(W) x 122(H) x 392(D) mm 17-1/8" x 4-13/16" x 15-7/16"
Weight:	11.8 kg. (26 lbs.)

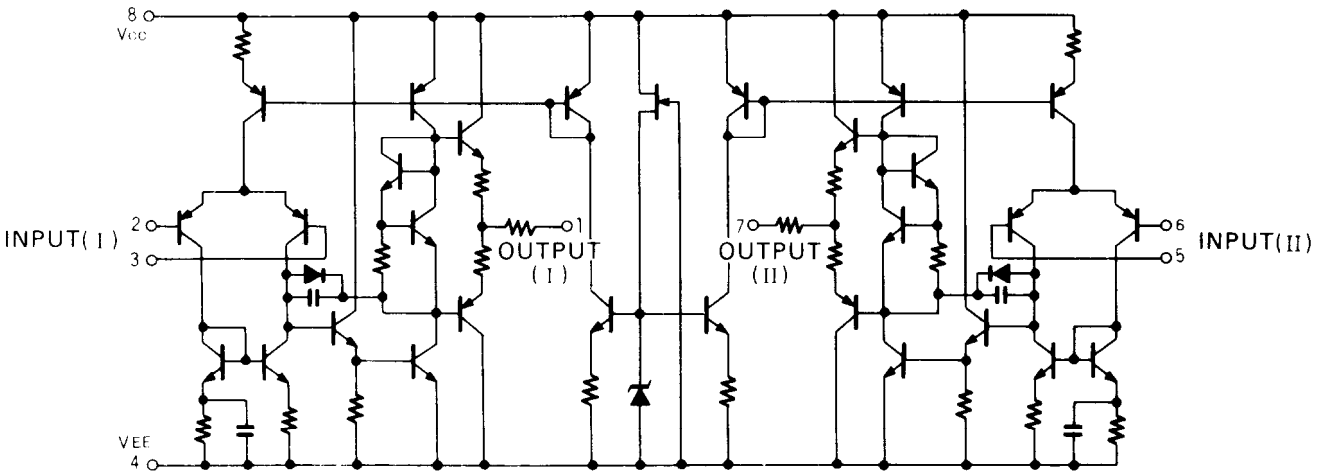
Specifications and features are subject to change without notice.

BLOCK DIAGRAM



IC BLOCK DIAGRAM

NJM4558DX, NJM4560DX



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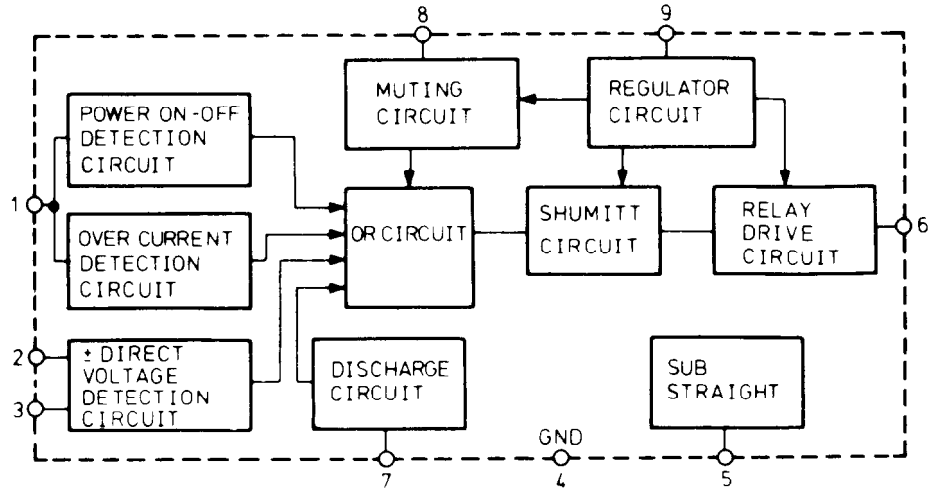


PRECAUTIONS

1. **Replacing the fuses**

For continued protection against risk fire, replace only with same type and same rating fuse.

CIRCUIT NO.	PARTS NO.	DESCRIPTION
F901	252052	7A (ST-6), AC fuse (120V model)
F901	252103	7A-TL, AC fuse (220V, 120V/220V model)
F902	252077	4A-SE-EAK, AC fuse (220V, 120V/220V model)
F701	252070	1A-SE-EAK, AC fuse (220V model)

2. Replacing the lamps

This unit uses the lamps listed below.

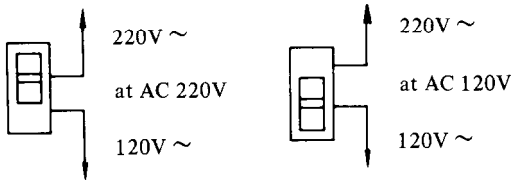
CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL001, PL002	210153	PL14V0.06AW-1.0
PL301, PL302	210155	PL14V0.06AW-1.0
PL303	210150	PL14V0.08AW-1.0
PL304, PL305	210146	PL14V0.06AW-1.0
PL306, PL307	210147	PL14V0.06AW-1.0
PL701	210172	PL14V0.06AW-2.0
PL702, PL703	210182	PL14V0.06AW-2.0
PL702	210173	PL14V0.08AW-2.0 (220V, 120V/220V model only)

3. Insulation resistance mesurement

Connect the insulating-resistance tester between the plug of power supply cable and the terminal GND on the back panel.
Specification; 500V more than 10 MΩ

4. Voltage selector (rear panel)

Worldwide models are equipped with a voltage selector to conform with local power supplies. Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on. Voltage is changed by sliding the groove in the switch with a screwdriver or similar instrument to the up or down position. Confirm that the switch has been moved all the way to the up or down before turning the power switch on. If there is no voltage selector switch on the unit you have purchased, it can only be used in areas where the power supply voltage is the same as that of the unit.



MAIN AMPLIFIER ADJUSTMENT

Set the all control knobs to standard position

Standard knob position			
INPUT SELECTOR	CD	SUBSONIC FILTER	OFF
CARTRIDGE SELECTOR	MM	BALANCE	Center
PHONO SELECTOR	PHONO 1	VOLUME	Minimum
REC. SELECTOR	OFF	LOUDNESS	OFF
MODE	STEREO	BASS	DEFEAT
MUTING	OFF	TREBLE	DEFEAT
		SPEAKERS	A

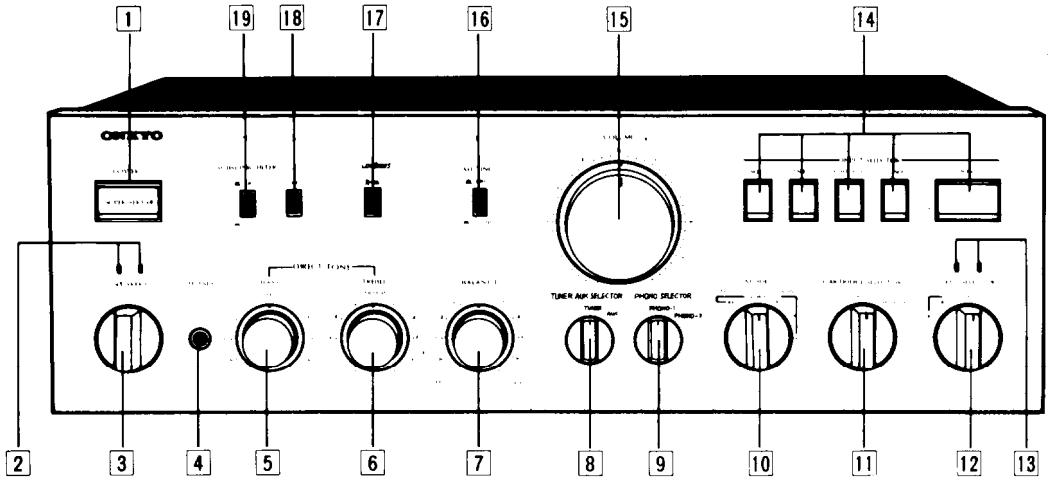
IDLING CURRENT ADJUSTMENT

1. Connect the DC voltmeter between Ild and Vct terminals.
2. Adjust the voltage to 12mV ± 5mV with semi-fixed resistor of R538 and R638.

NOTES.

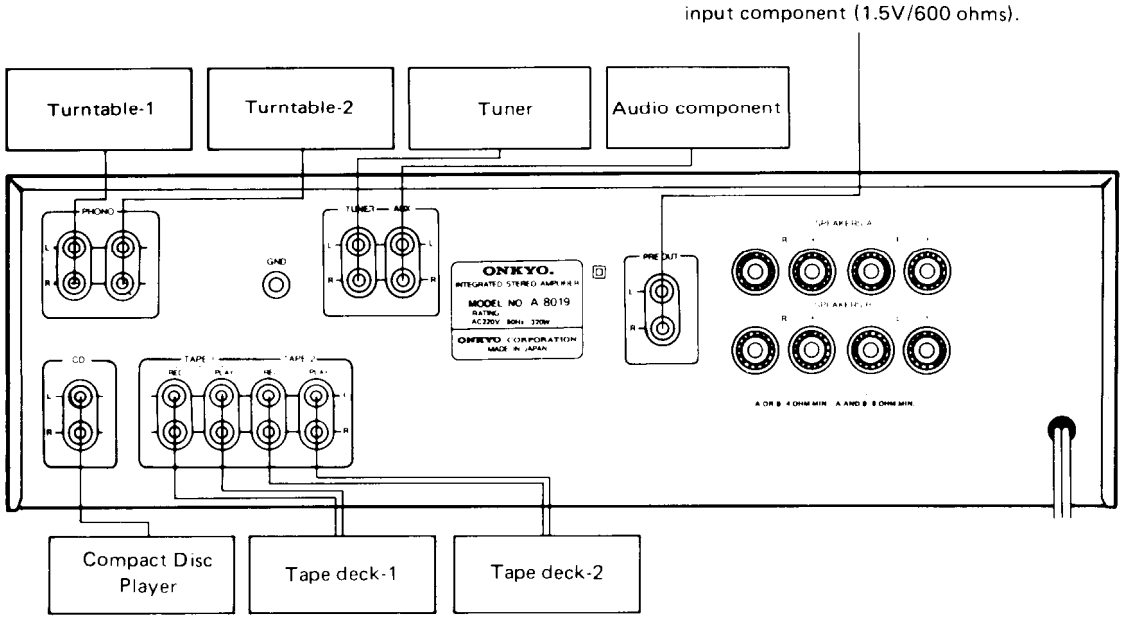
Adjust after switching on for 5 minutes.
VOLUME . . . . . Minimum
LOAD . . . . . Open

FRONT PANEL FACILITIES

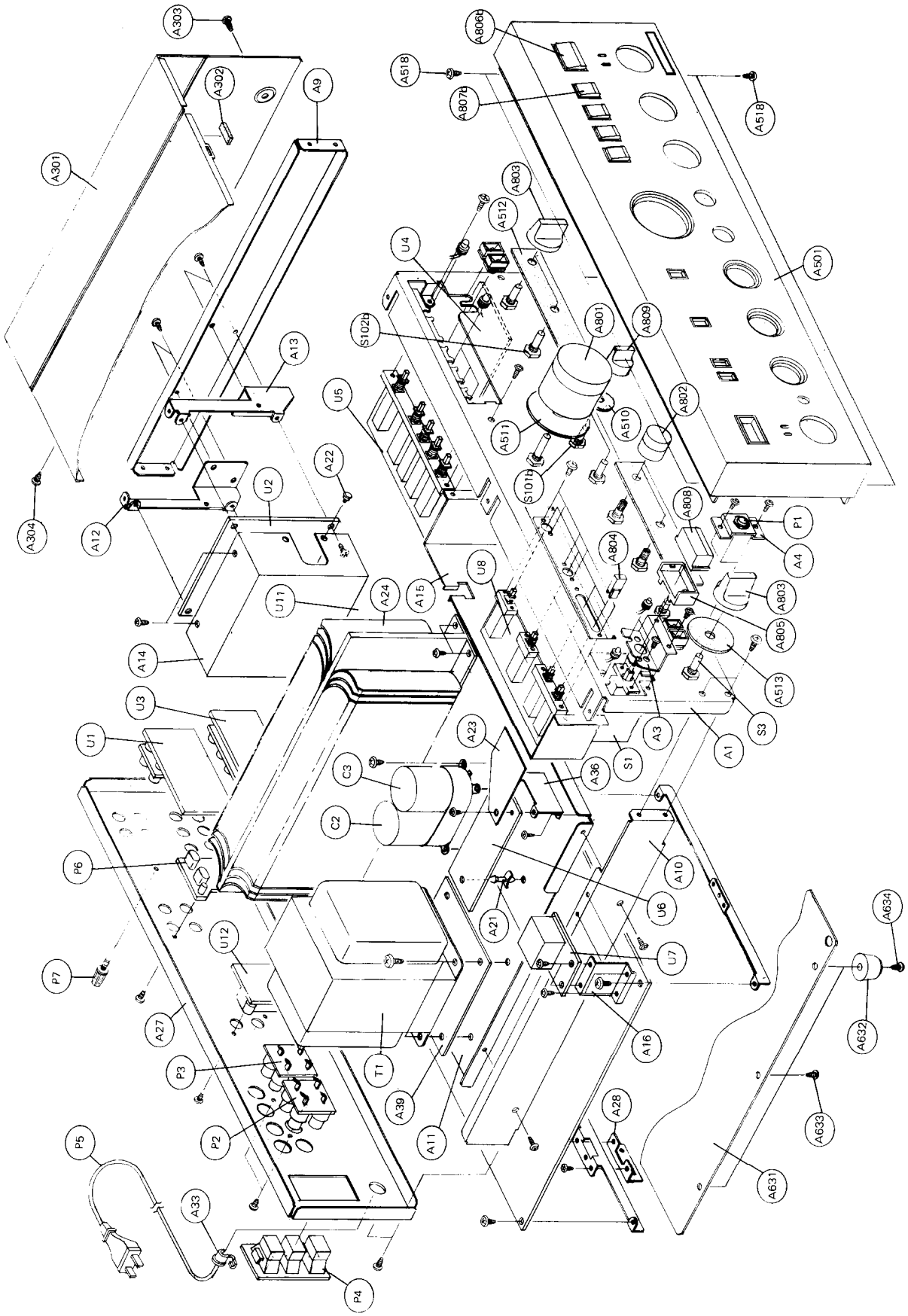


1. Power switch (POWER)
2. Speaker selector indicators
3. Speaker selector (SPEAKERS)
4. Headphones jack (PHONES)
5. Bass control (BASS)
6. Treble control (TREBLE)
7. Balance control (BALANCE)
8. Tuner/Aux Selector
9. Phono selector (PHONO SELECTOR)
10. Mode selector (MODE)
11. Cartridge selector (78EQ/MM/MC)
12. Recording source selector (REC. SELECTOR)
13. Recording/Dubbing indicators
14. Input selector switches (INPUT SELECTOR)
15. Volume control (VOLUME)
16. Muting switch (MUTING)
17. Loudness control
18. Subsonic filter, 15Hz (SUBSONIC)
19. Subsonic filter, 20Hz (SUBSONIC)
    When both 18. and 19. are depressed 35Hz

SYSTEM CONNECTIONS



CHASSIS-EXPLODED VIEW



CHASSIS-EXPLODED VIEW-PARTS LIST

REF. NO.	PARTS NO.	DESCRIPTION
A1	27110205B	Front bracket
A3	27140892	Bracket, power switch
A4	27140817	Bracket, headphone
A9	27115132B	Side bracket, right
A10	27115089C	Side bracket, left
A11	27130320G	Bracket, power transformer
A12	27140890A	Bracket
A13	27140891A	Bracket
A14	28184229	Cover, equalizer
A15	27130189A	Bracket
A16	27140895	Bracket
	27140818	Bracket (G) (W)
A21	27190164	Holder
A22	880004	Rivet
A23	28175072	Insulator plate
A24	27160143	Radiator
A27	27120586	Back panel (D)
	27120587	Back panel (G)
	27120588	Back panel (W)
A28	27140693	Bracket
A33	270280	SR-4K-4, Strainrelief
A36	27140778	Bracket
A37	27300601	Cover, capacitor for C1
A39	27150167A	Insulator plate
A301	28184187	Top cover
	28184234	Top cover (Black)
A302	28140020	Cushion
A303	838440089	4TTB+8B (BC), Tapping screw
A304	834430068	3TTS+6B (BC), Tapping screw
A501	12218121	Front panel ass'y
	12198121	Front panel ass'y (Black)
A510	28140127	Cushion ⌀32
A511	28140206	Cushion ⌀60
A512	28140532	Cushion, Tone
A513	28140185	Cushion ⌀40
A518	834430068	3TTS+6B (BC), Tapping screw
A631	27170108C	Bottom board
A632	27175009A	Bottom leg
A633	831430088	3TTW+8B (BC), Tapping screw
A634	834130108	3TTS+12B (BC), Tapping screw
A801	28321248B	Knob, Volume
	28321379B	Knob, Volume (Black)
A802	28321249	Knob, Balance
	28321380	Knob, Balance (Black)
A803	28321251A	Knob, Speakers
	28321381A	Knob, Speakers (Black)
A804	28320836	Knob, Push
	28321018	Knob, Push (Black)
A805	28320828C	Knob, Base
A806b	28321253	Knob, Selector, Phono
	28321383	Knob, Selector, Phono (Black)
A806c	27180141A	Spring
A807b	28321254	Knob, Selctor
	28321385	Knob, Selector (Black)
A807c	27180142	Spring
A808	28321100	Knob, Power ass'y
	28321101	Knob, Power ass'y (Black)
A809	28321263	Knob, Phono selector
	28321550	Knob, Phono selector (Black)
Q517, Q617	2201325	2SC2774 (G) or
	2201324	2SC2774 (V), Transistors
Q518, Q618	2201335	2SA1170 (G) or
	2201334	2SA1170 (Y), Transistors
D505, D605	4000068	VD1222, Varistor
PL001, PL002	210153	PL14V0.06AW-1.0, Lamps
T1 ⚠	230804	NPT-824D, Power transfoemer (D)
	230805	NPT-824G, Power transformer (G)
	230806	NPT-824DG, Power transformer (W)
C1 ⚠	3500065A	0.01μF, AC400V, Capacitor
C2, C3	3504176	20000μF, 69V, Elect. capacitor
R1	5177024	N24RG100KBT30, Variable resistor
R3, R4	441526204	62Ω, 1/2W, Metal oxide film resistor
R5, R6	441623914	390Ω, 1W, Metal oxide film resistor
S1 ⚠	25035201	NPS-111-L165P, Power switch
	25035015A	NPS-111LA3, Power switch (G) (W)
S2	25030236	NRSM-125-25F, Mode switch
S3	25030237	NRSM-254-25V, Speaker switch
S4 ⚠	25065123	NSS-1258P, Voltage selector switch (W)
S101b	25030246	Remote switch, Operation section
S102b	25030245	NRSM-104-25BU, Cartridge selector, Operation section
P1	25045092	HLJ0607-01-020, Stereo headphone jack
P2, P3	25060051	NTM-4PRMN20, Speaker terminal
P4 ⚠	25050139	NSCT-6P38, AC outlet (D)
P5 ⚠	253112	AS-UC-4#18, Power supply cable (D)
	253092	AS-CEE-2, Power supply cable (G) (W)
P6	25045028	NPJ-4PRBL06, Input terminal
P7	25060044	Ground terminal
P8	25108010	LG-2C, Terminal (G) (W)
F701	252070	1A-SE-EAK, Secondary fuse (G)
F901 ⚠	252052	7A(ST-6), Primary fuse (D)
	252103	7A-TL, Primary fuse (W)
F902 ⚠	252077	4A-SE-EAK, Primary fuse (G) (W)
	250153	P107, Short terminal
U1	12218579	NAPJ-1979, Phono selector switch pc board ass'y
	12224579A	NAPJ-1979a, Phono selector switch pc board ass'y (G)
U2	12218580	NAEQ-1980, Equalizer amplifier pc board ass'y
	12224580A	NAEQ-1980a, Equalizer amplifier pc board ass'y (G)
U3	12951568B	NAPJ-1468b, Input terminal pc board ass'y
U4	12951569E	NASW-1469e, Rec. Selector switch pc board ass'y
U5	12941570	NASW-1470, Input selector switch pc board ass'y
U6	12218571I	NAPS-1471i, Rectifier circuit pc board ass'y
	12224571G	NAPS-1471g, Rectifier circuit pc board ass'y (G)
	12220571H	NAPS-1471h, Rectifier circuit pc board ass'y (W)
U7	12218518C	NATB-1818c, Turbo filter pc board ass'y
U8	12218573B	NASW-1473b, Switch circuit pc board ass'y
	12224573C	NASW-1473c, Switch circuit pc board ass'y (W) (G)
U9	12218574E	NATC-1474e, Tone control pc board ass'y
U10	12952521	NASW-1821, Tuner/Aux. selector switch pc board ass'y
U11	12218552	NAMA-2052, Power amplifier pc board ass'y
	12224552A	NAMA-2052a, Power amplifier pc board ass'y (G)
U12	12218553	NAPJ-2053, Pre. output terminal pc board ass'y

NOTE
(D): Only 120V model (W): Only 120V/220V model
(G): Only 220V model (Black): Black model

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PARTS NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD PARTS LIST

INPUT TERMINAL PC BOARD (NAPJ–1468b)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	25045071	NPJ-2PDBL35, Input terminal
	25045072	NPJ-6PDBL36, Input terminal

REC. SELECTOR SWITCH PC BOARD (NASW–1469e)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL301, PL302	210155	PL14V0.06AW-1.0, Lamp
C721	352741019	100μF, 16V, Elect. capacitor
R721	441521014	100Ω, 1/2W, Metal oxide film resistor
R722	441523004	30Ω, 1/2W, Metal oxide film resistor
S301	25030241	NRSM-166-25ZV, Remote switch, Operation section

INPUT SELECTOR SWITCH PC BOARD (NASW–1470)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL303	210150	PL14V0.08AW-1.0, Lamp
PL304, PL305	210146	PL14V0.06AW-1.0, Lamps
PL306, PL307	210147	PL14V0.06AW-1.0, Lamps
R725	441522204	22Ω, 1/2W, Metal oxide film resistor
S302	25035340	NPS-542-L304, Input selector switch

RECTIFIER CIRCUIT PC BOARD (NAPS–1471i)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D912 ~ D922	223841	GP-30G, Diodes
F901a	250113	S-N5051, Fuse holder

RECTIFIER CIRCUIT PC BOARD (NAPS–1471g)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D912 ~ D922	223841	GP-30G, Diodes
F902a	25050065	YSH403T, Fuse holder
	29360374	T4A/250V, Label

RECTIFIER CIRCUIT PC BOARD (NAPS–1471h)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D912 ~ D922	223841	GP-30G, Diodes
F901a	250113	S-N5051, Fuse holder
	29360486	7A/125V, Label
F902a	25050065	YSH403T, Fuse holder
	29360374	T4A/250V, Label

SWITCH CIRCUIT PC BOARD (NASW–1473b)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL701	210172	PL14V0.06AW-2.0, Lamp
PL702, PL703	210182	PL14V0.06AW-2.0, Lamp
C311, C312	352782299	0.22μF, 50V, Elect. capacitors
C313, C314	352781599	0.15μF, 50V, Elect. capacitors
R724	442526804	68Ω, 1/2W, Metal oxide film resistor
S304, S307	25035266	NPS-122-L230, Switches
S305(S306)	25035269	NPS-222-L233, Switches

SWITCH CIRCUIT PC BOARD (NASW–1473c)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL701	210172	PL14V0.06AW-2.0, Lamp
PL702	210173	PL14V0.08AW-2.0, Lamp
C311, C312	352782299	0.22μF, 50V, Elect. capacitors
C313, C314	352781599	0.15μF, 50V, Elect. capacitors
R724	442526804	68Ω, 1/2W, Metal oxide film resistor
S304, S307	25035266	NPS-122-L230, Switches
S305(S306)	25035269	NPS-222-L233, Switch

TONE CONTROL PC BOARD (NATC–1474e)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
C315, C316	379121235	0.012μF, 50V, Capacitors, DEW
C317, C318	379125625	5600pF, 50V, Capacitors, DEW
C319, C320	379121025	0.001μF, 50V, Capacitors, DEW
C321, C322	379123335	0.033μF, 50V, Capacitors, DEW
R317	5148032	N16RGMC250KMN25, Balance control variable resistor
R321	5104076	N16RGM11C219K25, Treble control variable resistor
R323	5104075	N16RQM110K180K25, Bass control variable resistor
R001	5177024	N24RG100KBT30 Volume

TURBO FILTER PC BOARD (NATB–1818c)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
C51 ~ C53	380504745	0.47μF, 160V, Capacitors, CF
R53	441525104	51Ω, 1/2W, Metal oxide film resistor
	27300609	Cover

TUNER/AUX. SELECTOR SWITCH PC BOARD (NASW–1821)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
S303	25030202	NRSM-122-15U, Switch

PHONO SELECTOR SWITCH PC BOARD (NAPJ–1979)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
S101a	25065100	NSS-4351, Remote switch
	25045069	NPJ-4PDBL34, Input terminal

PHONO SELECTOR SWITCH PC BOARD (NAPJ–1979a)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
L101, L102	231056	NCH-1098, Coils
C101 ~ C108	372121014	100pF, 50V, Capacitors. ST
S101a	25065100	NSS-4351, Remote switch
	25045069	NPJ-4PDBL34, Input terminal

EQUALIZER AMPLIFIER PC BOARD (NAEQ–1980)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q101 ~ Q104	2211783 or 2211782	2SA991(E) or 2SA991(F), Transistors
Q105, Q106	222570	NJM-4560DX, ICs
D101 ~ D104	223145	1S2076TD, Diodes
C109, C110	392841007	10μF, 16V, Elect. capacitors
C115, C116	372122214	220pF, 50V, Capacitors. ST
C117, C118	372124705	470pF, 50V, Capacitors, ST
C121, C122	379124725	4700pF, 50V, Capacitors, DEW
C123, C124	379122234	0.022μF, 50V, Capacitors, DEW
C125, C126	379121834	0.018μF, 50V, Capacitors, DEW
C127, C128	379124734	0.047μF, 50V, Capacitors, DEW
C129, C130	392822227	2200μF, 6.3V, Elect. capacitors
C131, C132	3500078	1μF, 50V, Elect. capacitors, SH
C133, C134	379121057	1μF, 50V, Capacitors, DEW
C135, C136	379121225	1200pF, 50V, Capacitors, DEW
C141, C142	392851017	100μF, 25V, Elect. capacitors
S102a	25065238	NSS-64101, Remote switch

EQUALIZER AMPLIFIER PC BOARD (NAEQ–1980a)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q101 ~Q104	2211783 or	2SA991 (E) or
	2211782	2SA991 (F), Transistors
Q105, Q106	222570	NJM-4560DX, ICs
D101 ~D104	223145	1S2076TD, Diodes
C109, C110	392841007	10μF, 16V, Elect. Capacitors
C111, C112	379121035	0.01μF, 50V, Capacitors, DEW
C115, C116	372122214	220pF, 50V, Capacitors. ST
C117, C118	372124705	470pF, 50V, Capacitors, ST
C121, C122	379124725	4700pF, 50V, Capacitors, DEW
C123, C124	379122234	0.022μF, 50V, Capacitors, DEW
C125, C126	379121834	0.018μF, 50V, Capacitors, DEW
C127, C128	379124734	0.047μF, 50V, Capacitors, DEW
C129, C130	392822227	2200μF, 6.3V, Elect. capacitors
C131, C132	3500078	1μF, 50V, Elect. capacitors, SH
C133, C134	379121057	1μF, 50V, Capacitors, DEW
C135, C136	379121225	1200pF, 50V, Capacitors, DEW
C141, C142	392851017	100μF, 25V, Elect. capacitors
S102a	25065238	NSS-64101, Remote switch

POWER AMPLIFIER PC BOARD (NAMA–2052, NAMA–2052a)

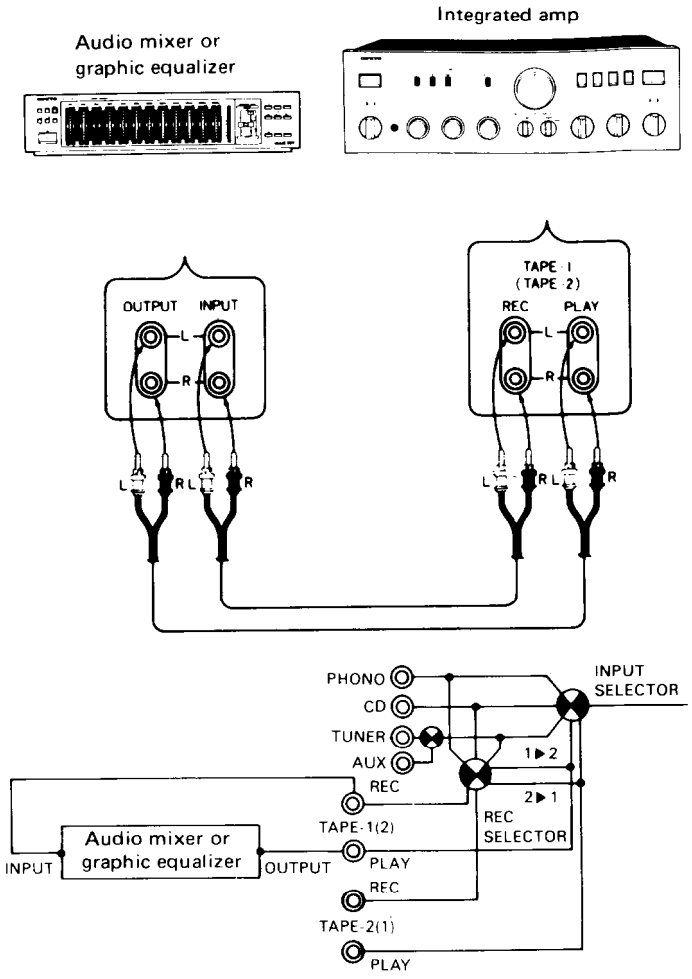
CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Transistors	
Q501, Q601	2211915 or	2SK240 (GR) or
	2211916	2SK240 (BL)
Q502, Q503, Q507	2211255	2SC1815 (GR)
Q508, Q514, Q602		
Q603, Q607, Q608		
Q614		
Q504, Q604	2211515 or	2SA995 (F) or
	2211516	2SA995 (G)
Q505, Q506, Q509	2211455	2SA1015 (GR)
Q605, Q606, Q609		
Q510, Q610, Q905	2211732 or	2SC1845 (F) or
	2211733	2SC1845 (E)
Q511, Q611, Q906	2211792 or	2SA992 (F) or
	2211793	2SA992 (E)
Q512, Q612	2211743 or	2SA915 (M) or
	2211742	2SA915 (L)
Q513, Q613	2211763 or	2SC1940 (M) or
	2211762	2SC1940 (L)
Q515, Q615	2200863 or	2SC2238 (O) or
	2200864	2SC2238 (Y)
Q516, Q616	2200873 or	2SA968 (O) or
	2200874	2SA968 (Y)
Q519, Q619	2211395 or	2SA970 (GR) or
	2211396	2SA970 (BL)
Q703	2211504	2SA950 (Y)
Q901	2201073 or	2SD880 (O) or
	2201074	2SD880 (Y)
Q902	2201243 or	2SB834 (O) or
	2201244	2SB834 (Y)
Q903, Q904	2211945 or	2SK246 (GR) or
	2211315	2SK117 (GR)
	ICs	
Q561, Q661	222502	NJM-4558DX
Q702	222584	TA7317P
	Diodes	
D502 ~D604	223145	1S2076TD
D561 ~D662		
D703, D705		
D704	2240972 or	GZA-6.2Y or
	2240973	GZA-6.2Z
D706	223862	WL-01
D901, D902	2241233 or	GZA-22Z or
	2241232	GZA-22Y
D903, D904	2241113 or	GZA-12Z or
	2241112	GZA-12Y
	Coils	
L501, L601	231015	S-0.8C
	Capacitors	
C501, C601	372126805	68pF, 50V, ST
C502, C602	379121035	0.01μF, 50V, DEW
C504, C604	379122735	0.027μF, 50V, DEW
C509, C510, C609	379124735	0.047μF, 50V, DEW
C610		
C515, C516, C615	352722219	220μF, 6.3V, Elect.
C616		
C519, C619	379122235	0.022μF, 50V, DEW
C520, C620	379121037	0.01μF, 50V, DEW
C523, C623	379121047	0.1μF, 50V, DEW
C526, C626	372123314	330pF, 50V, ST
C529, C629	379124735	0.047μF, 50V, DEW
C561, C562, C661	35272209	22μF, 25V, Elect.
C662		
C564, C664	372123305	33pF, 50V, ST
C703	352722219	220μF, 6.3V, Elect.
C704	352732209	22μF, 10V, Elect.
C705	352784799	0.47μF, 50V, Elect.
C707	352743319	330μF, 16V, Elect.
C708	352741529	1500μF, 16V, Elect.
C709	379122237	0.022μF, 50V, DEW
C901, C902	352753319	330μF, 25V, Elect.
C905, C906	352754709	47μF, 25V, Elect.
C907, C908	352772219	220μF, 63V, Elect.
	Resistors	
R511, R611	442522714	270Ω, 1/2W, Metal oxide film
R526, R529, R626	442524314	430Ω, 1/2W, Metal oxide film
R629		
R527, R528, R627	441526204	62Ω, 1/2W, Metal oxide film
R628		
R536, R537, R636	442521814	180Ω, 1/2W, Metal oxide film
R637		
R538, R638	5225074	N10HR10KBDM, Semi-fixed
R540, R640	442521014	100Ω, 1/2W, Metal oxide film
R541, R542, R641	442520274	2.7Ω, 1/2W, Metal oxide film
R642		
R543, R544, R643	4000063	0.47Ω, 2W, Metal plate
R644		
R545, R645	441720104	1Ω, 2W, Metal oxide film
R546, R547, R646	4000080	0.47Ω, 5W, Metal plate
R647		
R549, R649	441620564	5.6Ω, 1W, Metal oxide film
R550, R555, R650	441622004	20Ω, 1W, Metal oxide film
R655		
R715	442522404	24Ω, 1/2W, Metal oxide film
R901, R902	441521214	120Ω, 1/2W, Metal oxide film
	Radiators	
	27160029-1	RAD-07B
	Relay	
	25065036 or	NRL-4P3A-DC12-01 or
	25065236	NRL-4P3A-DC12-25

PRE. OUTPUT TERMINAL PC BOARD (NAPJ–2053)

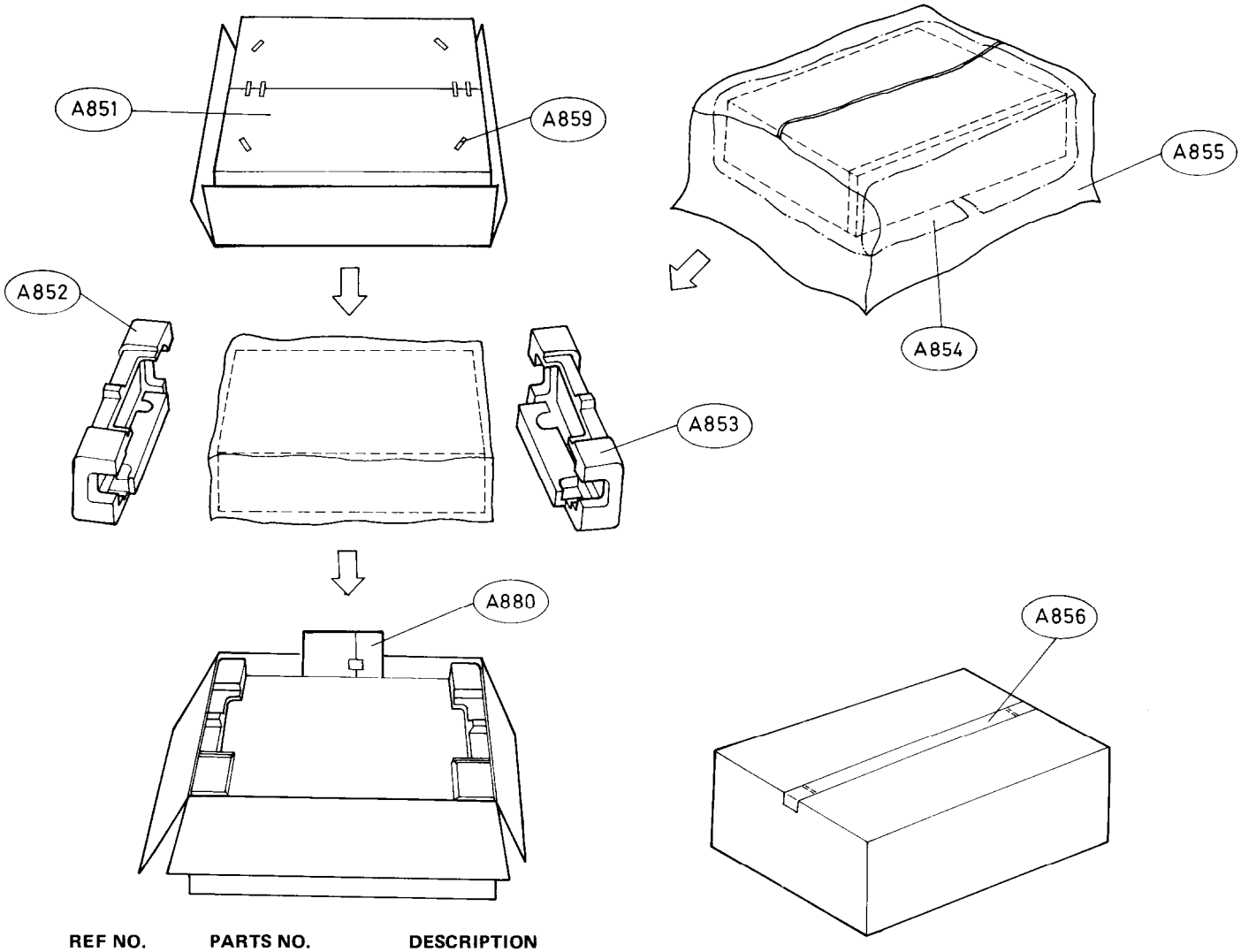
CIRCUIT NO.	PARTS NO.	DESCRIPTION
	25045071	NPJ-2PDBL35, Terminals, Pre. output

Using a Mixing Console or Graphic Equalizer

A mixing console or graphic equalizer can be connected to the TAPE-1 or TAPE-2 terminals as shown below. The input selector is then set to the TAPE 1 or 2 setting, depending on the terminals to which the mixing console or equalizer is connected and the recording source selector to the program source to be used with mixing or equalization. To perform mixing or equalization with a tape deck program, set the recording source selector to 2▶1 (or 1◀2) for mixing or equalizing the tape program from tape deck 2 (or tape deck 1).



PACKING PROCEDRES

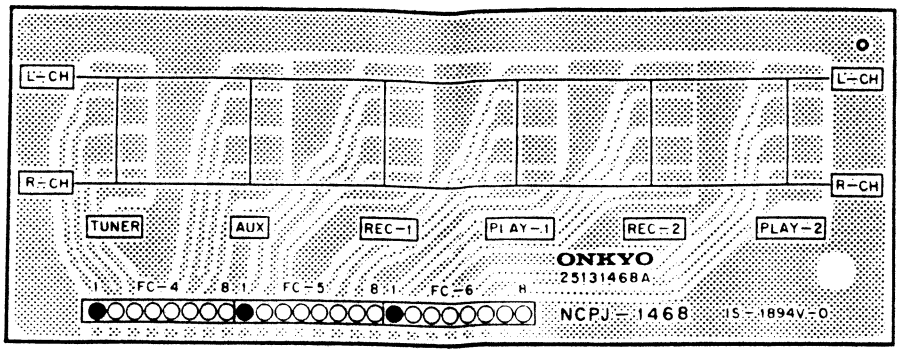


REF NO.	PARTS NO.	DESCRIPTION
A851	29050960	Master carton box
	29050961	Master carton box (Black)
A852	29090488A	Pad, left
A853	29090489	Pad, right
A854	29095012-1	500 x 800, Protection sheet
A855	29100038A	720 x 950, Poly bag
A856	260012	Damplon tape
A859	282301	Sealing hook
A880	Accessary bag ass'y	
	29340783	Instruction manual (D)
	29340784	Instruction manual (G) (W)
	29365006-6	Warranty card (U)
	29358002A	Service station list (U)
	29365010	Lable, bottom (U)
	29365011	Lable, top cover (U)
	29100006A	350 x 250, Poly bag
	29100002A	80 x 150, Poly bag (W)
	25055018	CV-K-1, Conversion plug (W)

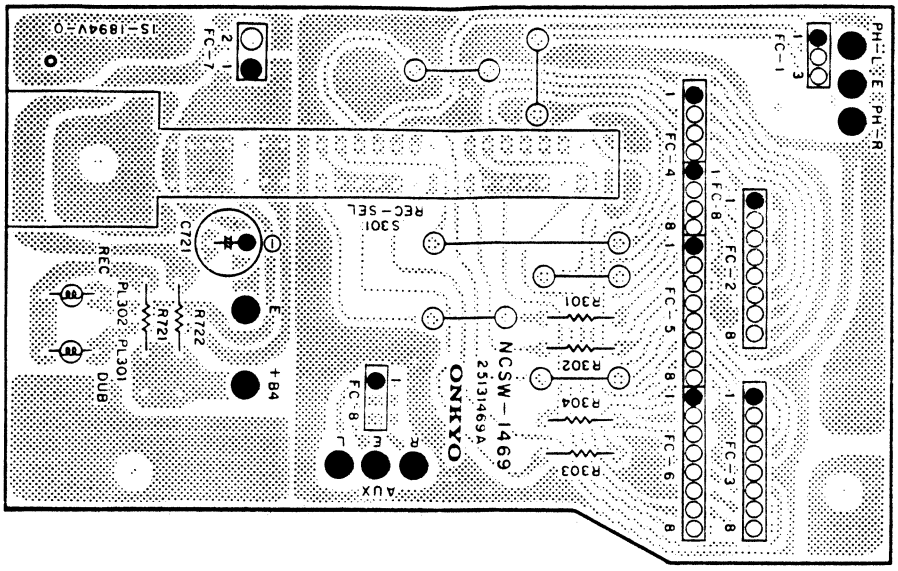
NOTE
(U): Only U.S.A. model
(G): Only 220V model
(W): Only 120V/220V model
(Black): Black model

PRINTED CIRCUIT BOARD VIEW FROM COMPONENT SIDE

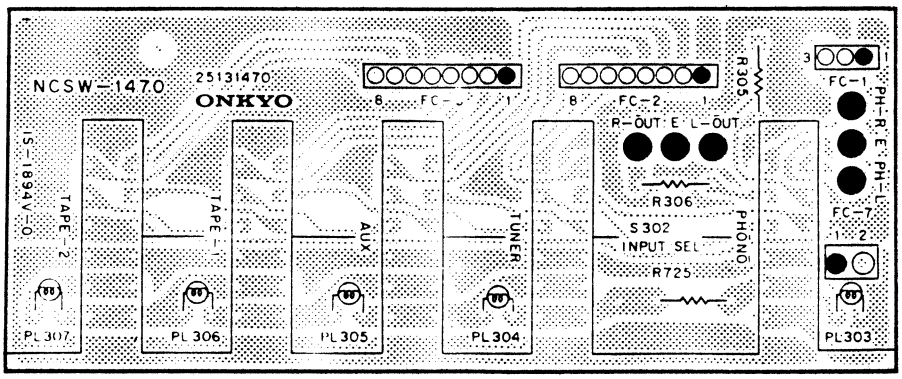
NAPJ-1468



NASW-1469

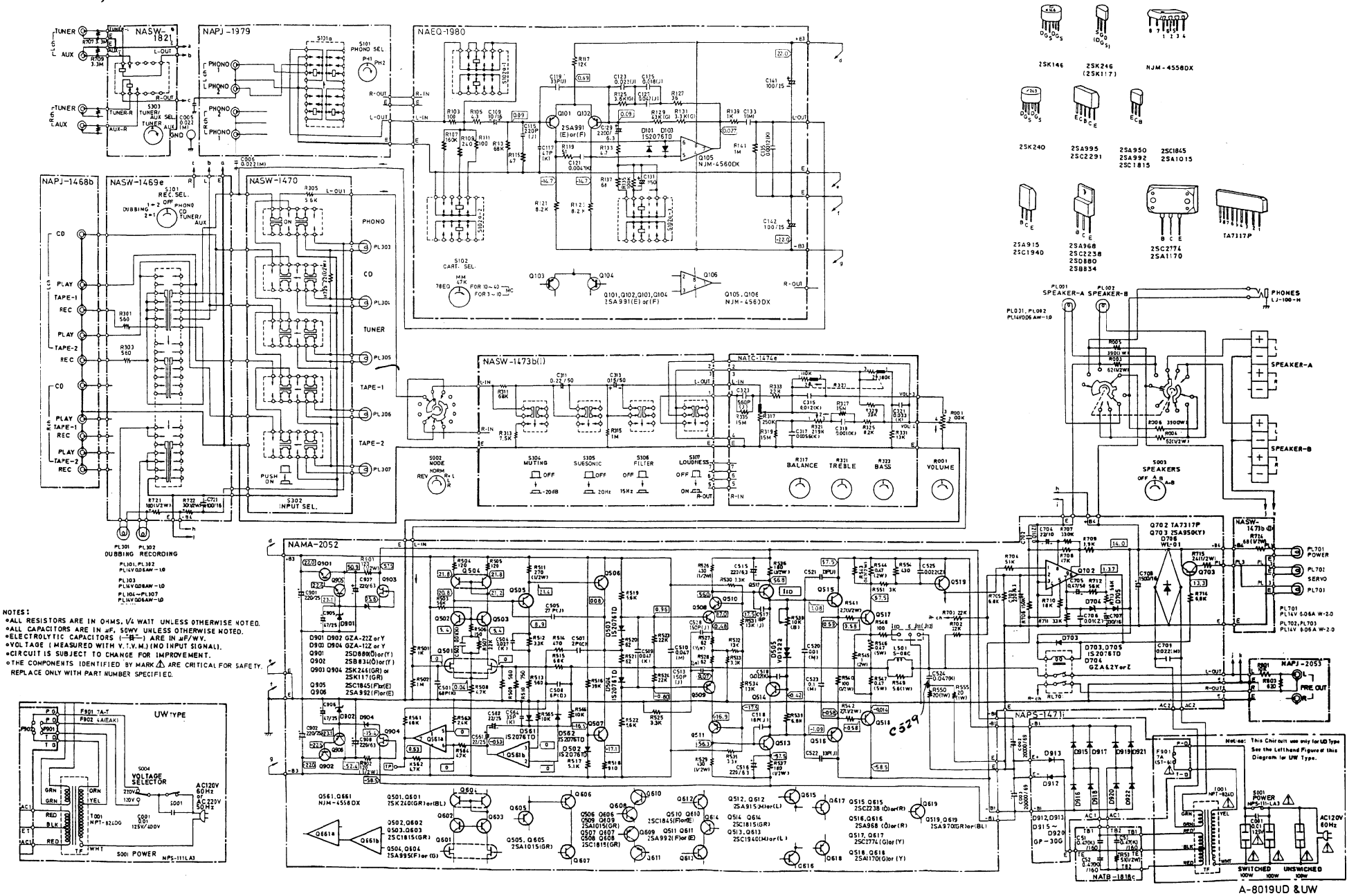


NASW-1470



SCHEMATIC DIAGRAM

(120V Model, 120V/220V Model)



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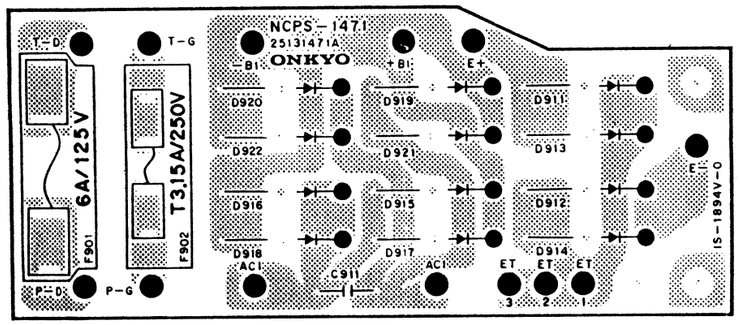
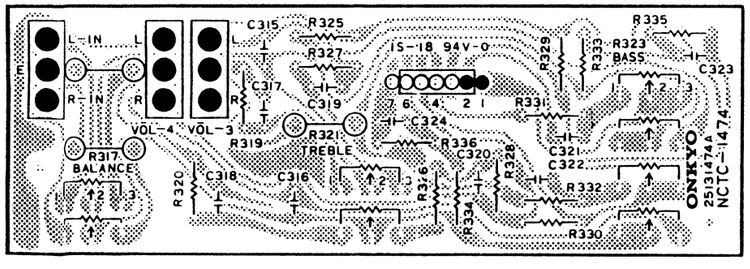
NAPS-1471

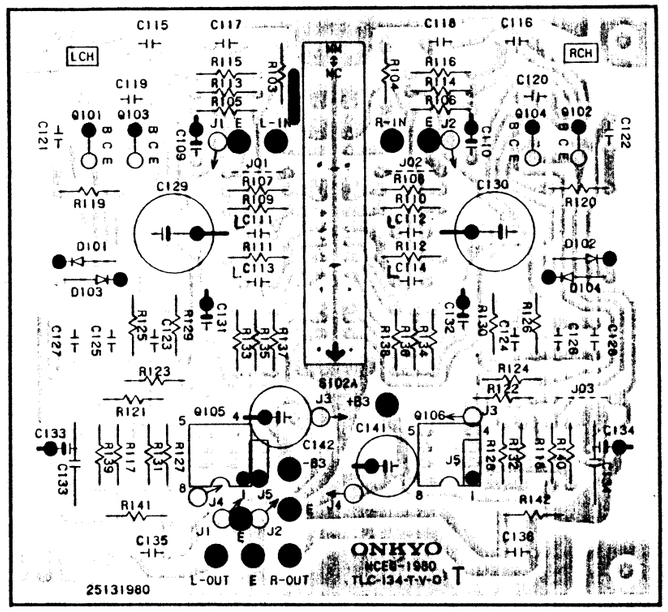


NASW-1473

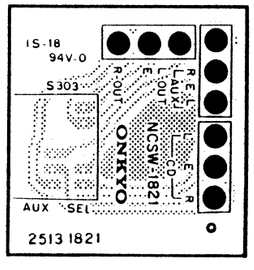
NATC-1474



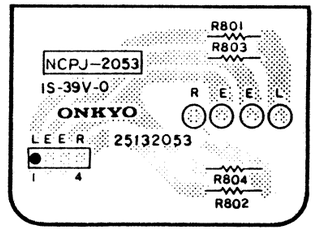
NAEQ-1980



NASW-1821

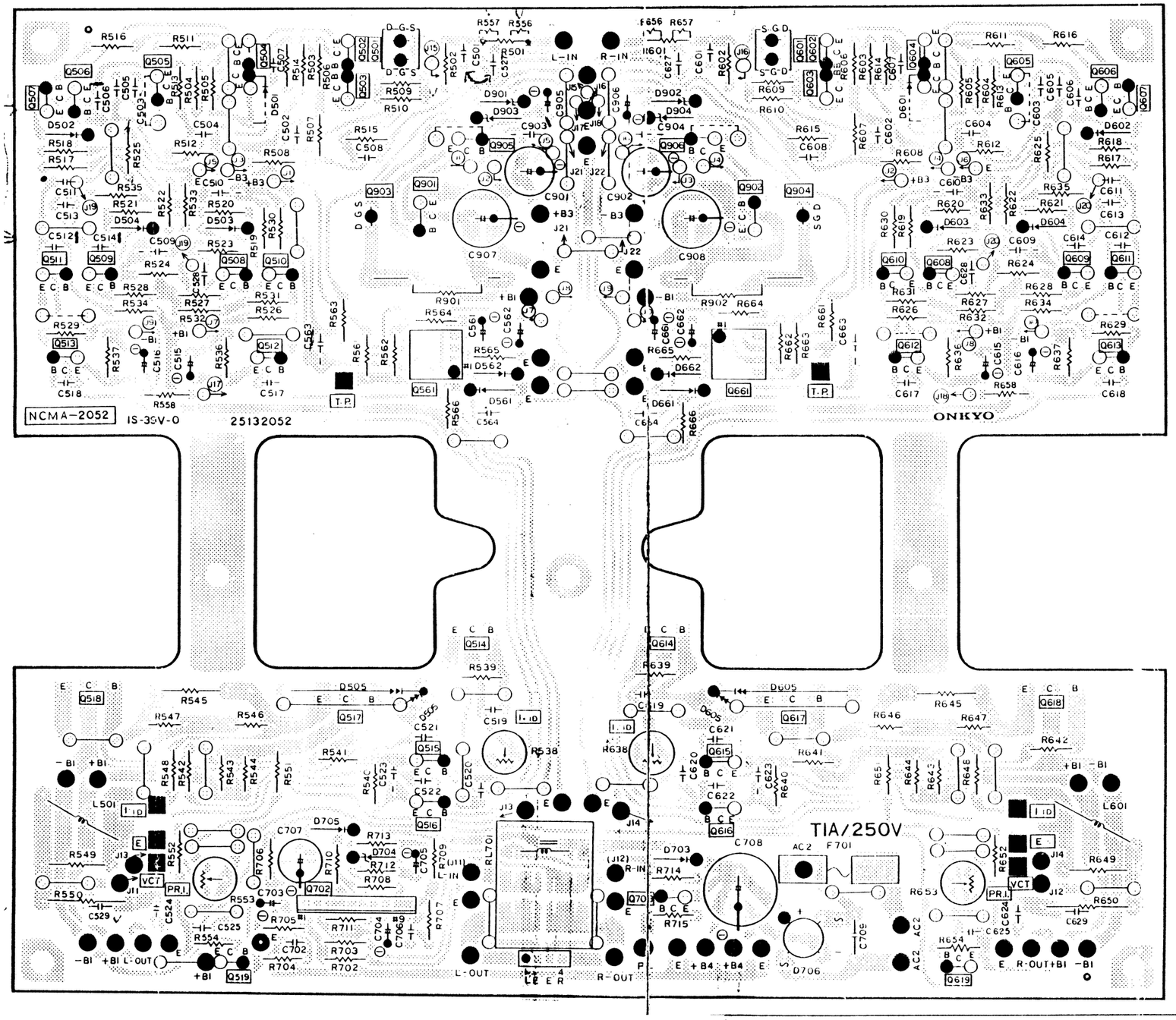


NAPJ-2053



A-8019 A-8019

NAMA-2052



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